

Claims

- [c1] 1.A method of adaptively controlling the speed of a reference vehicle having a controller comprising:
 detecting a target vehicle;
 setting a reference vehicle headway distance indicative of a desired separation between said reference vehicle and said target vehicle;
 receiving at said reference vehicle, target vehicle data from said target vehicle;
 and
 modifying said reference vehicle headway distance as a function of said target vehicle data.
- [c2] 2.A method according to claim 1 wherein said target vehicle data includes a braking capability value (BC_T) for said target vehicle, and wherein the step of modifying includes modifying said reference vehicle headway distance as a function of said BC_T .
- [c3] 3.A method according to claim 1 wherein said target vehicle data includes data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; target vehicle speed; or a road condition value.
- [c4] 4.A method according to claim 2 wherein modifying said reference vehicle headway distance includes increasing said reference vehicle headway distance if said BC_T indicates less than an optimum braking capability.
- [c5] 5.A method according to claim 1 wherein said target vehicle data includes a target vehicle operator attention value indicative of a level of potential target vehicle operator distraction.
- [c6] 6.A method according to claim 1 comprising:
 determining a braking capability value (BC_R) for said reference vehicle, and
 wherein said step of modifying includes modifying said reference vehicle headway distance as a function of said BC_T and said BC_R .
- [c7] 7.A method according to claim 6 wherein determining said BC_R comprises analyzing reference vehicle data comprising at least one of: a tire pressure

value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; reference vehicle speed; or a road condition value.

- [c8] 8.A method according to claim 6 wherein modifying said reference vehicle headway distance includes increasing said reference vehicle headway distance if said BC_R indicates less than an optimum braking capability.
- [c9] 9.A method according to claim 7 wherein said reference vehicle data includes a reference vehicle operator attention value indicative of a level of potential reference vehicle operator distraction.
- [c10] 10.A method of adaptively controlling the speed of a reference vehicle having a controller comprising:
 detecting a target vehicle;
 setting a reference vehicle headway distance indicative of a desired separation between said reference vehicle and said target vehicle;
 receiving at said reference vehicle, a braking capability value (BC_T) for said target vehicle;
 generating a braking capability value (BC_R) for said reference vehicle; and
 modifying said reference vehicle headway distance as a function of said BC_T and said BC_R .
- [c11] 11.A method according to claim 10 wherein determining said BC_R comprises analyzing reference vehicle data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; reference vehicle speed; or a road condition value.
- [c12] 12.A method according to claim 11 wherein said BC_T is generated at said target vehicle as a function of target vehicle data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; reference vehicle speed; or a road condition value.
- [c13] 13.A method according to claim 10 wherein said BC_T includes a target vehicle operator attention value indicative of a level of potential target vehicle operator distraction.

- [c14] 14.A method according to claim 10 wherein said BC_R includes a target vehicle operator attention value indicative of a level of potential target vehicle operator distraction.
- [c15] 15.A method according to claim 10 wherein modifying includes increasing said reference vehicle headway distance if said BC_R indicates less than an optimum braking capability.
- [c16] 16.A method according to claim 10 wherein modifying includes decreasing said reference vehicle headway distance if said BC_T indicates less than an optimum braking capability.
- [c17] 17.An adaptive cruise control system for a reference vehicle comprising:
a memory for storing reference vehicle data;
a detection system for detecting a target vehicle;
a receiver receiving target vehicle data from said detected target vehicle; and
a controller coupled to said memory for adaptively controlling a speed of said reference vehicle to maintain a reference vehicle headway distance indicative of a desired separation between said reference vehicle and said target vehicle, wherein said reference vehicle headway distance is generated as a function of said reference vehicle data and said target vehicle data.
- [c18] 18.A system according to claim 17 wherein said reference vehicle data includes a braking capability value (BC_R) for said reference vehicle.
- [c19] 19.A system according to claim 18 wherein said target vehicle data includes a braking capability value (BC_T) for said target vehicle.
- [c20] 20.A system according to claim 17 wherein said reference vehicle data includes data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; target vehicle speed; or a road condition value.